

What is claimed is:

1. A method of preparing layered lithium-chromium-manganese oxides for lithium batteries, comprising the steps of:

5 preparing a homogeneous precipitation by adding lithium hydroxide (LiOH) solution to a mixed solution of chromium acetate ($\text{Cr}_3(\text{OH})_2(\text{CH}_3\text{CO}_2)_7$) and manganese acetate ($(\text{CH}_3\text{CO}_2)_2\text{Mn}\cdot 4\text{H}_2\text{O}$);

preparing precursor powders having the formula $\text{Li}[\text{Cr}_x\text{Li}_{(1/3-x/3)}\text{Mn}_{(2/3-2x/3)}]\text{O}_2$ where $0.1 \leq x \leq 0.5$ by firing the homogeneous precipitation; and

10 preparing layered oxide powders by heat treating the precursor powders.

2. The method as claimed in claim 1, wherein the preparation of the precursor powder comprises:

heating the homogeneous precipitation to remove excess water; and

15 firing the homogeneous precipitation by heating the homogeneous precipitation on a hot plate.

3. The method as claimed in claim 2, wherein the firing of the homogeneous precipitation on a hot plate is performed after the viscous precipitation is coated on titanium foil.

4. The method as claimed in claim 1, wherein the heat treatment of the precursor powders comprises:

firing at a temperature T_1 , which is in the range of 650 to 700° C; and

25 annealing at a temperature T_2 which is higher than T_1 temperature.

5. The method as claimed in claim 4, wherein the temperature T_2 is in the range of 900 to 1000° C.

6. The method as claimed in claim 4, further comprising grinding the precursor powders fired at temperature T_1 before annealing at temperature T_2 .

7. The method as claimed in claim 4, wherein the annealing at temperature T_2 is performed in air.

8. The method as claimed in claim 4, further comprising quenching the precursor powders annealed at temperature T_2 .